BULLETIN OF MISCELLANEOUS INFORMATION No. 2 1940
ROYAL BOTANIC GARDENS, KEW

VII—TROPICAL AFRICAN PLANTS: XVIII.*

Saxifragaceae.

Vahlia Goddingii *E. A. Bruce*, sp. nov. [Saxifragaceae]; affinis *V. somalensi* Chiov., sed caulibus et ramis glabris, receptaculo glabro vel nonnunquam basi pilis longis paucissimis instructo differt.

Herba erecta vel suberecta, 30–40 cm. alta, ramosa, caulibus erectis vel adscendentibus glabris, senioribus teretibus basi induratis 3–4 mm. diametro, junioribus subgracilibus circiter 1·5 mm. diametro, internodiis 1–3 cm. longis. *Folia* sessilia, chartacea, lanceolata vel ovato-lanceolata, apice acuta vel leviter acuminata, basi rotundata vel late cuneata, 1·3–3 cm. longa, 0·5–1·2 cm. lata, utrinque glabra, margine integra, nervis inconspicuis. *Flores* ex axillis foliorum superiorum 1–2 fasciculati vel brevissime pedunculati; pedicelli 1–2 mm. longi; bracteolae lineari-subulatae, circiter 2 mm. longae, parce pilosae. *Calyx* 5-partitus, lobis ovatis vel ovato-lanceolatis acute acuminatis circiter 5 mm. longis 2·5 mm. latis glabris, receptaculo subturbinato 2·5 mm. longo 3 mm. diametro valde 5-costato glabro vel basi pilis longis paucissimis instructo. *Petala* 5, flava, obovata, calycis lobis longiora, 5–6 mm. longa, 3–4 mm. lata, apice subrotundata. *Filamenta* circiter 5 mm. longa, parce pubescentia, basi squamula hyalina ± transverse elliptica 1 mm. lata parce lanato-pubescente; antherae oblongae, 2 mm. longae. *Styli* 2, 6–7 mm. longi, parce et breviter pubescentes; stigmata discoidea.

British Somaliland. Harradigit, 44° 31′E., 7° 40′ N., 981 m., Nov. 1934, *Godding* 237 (type) :—a small plant with yellow flowers; native name " Wandeck."

Balsaminaceae.

Impatiens (Salpingochilon) **Tweedieae** *E. A. Bruce*, sp. nov. [Balsaminaceae]; affinis *I. kilimanjari* Oliv. sed foliis acute serratis haud crenatis, alis corollae majoribus et valde inaequaliter bilobis differt.

Herba 30–45 cm. alta, erecta; caules glabri vel apicem versus lepidoti, internodiis 2–4 cm. longis inferioribus longioribus. *Folia* opposita, petiolata; petiolus 0·5–2·5 cm. longus, basi leviter ampliatus, glaber vel pilis paucis brevibus in sulco vestitus; lamina elliptica vel ovato-elliptica, apice acute acuminata, basi cuneata, supra pilis paucis brevibus ornatis demum glabra, infra glabra,

* Continued from K.B. 1939, 247.

2·5–9 cm. longa, 1·5–3·5 cm. lata, margine acute glanduloso-serrato, nervis lateralibus utrinsecus circiter 8 arcuato-ascendentibus. *Flores* subglabri, in axillis foliorum superiorum 1 vel 2 dispositi, rosei et albi vel scarlatini, longe pedicellati, pedicellis 2–5 cm. longis glabris basi bracteatis ; bracteae lineari-lanceolatae, acutae, circiter 2 mm. longae. *Sepala* 2, oblongo-lanceolata, 5 mm. longa, apice acuta, glabra. *Labellum* infundibuliforme, fauce obliquo, infra apiculatum, circiter 1 cm. diametro ; calcar latum, basin versus angustatum, incurvatum, circiter 1·5 cm. longum, parte inferiore 0·5 cm. incurvato ; alae ovatae, apice rotundatae, 1·2 cm. longae, profunde et inaequaliter bilobae, lobo inferiore majore late ovato 7 mm. longo 5 mm. lato, lobo superiore ovato-lanceolato 4 mm. longo 2 mm. lato ; vexillum late ovatum, cucullatum, dorso carinatum, apice acutum, 7 mm. longum et latum. *Fructus* subcylindricus, basi et apice leviter angustatus, 1·4 cm. longus, 0·4 cm. diametro, glaber.

KENYA COLONY. Mt. Elgon, 3750 m. and higher, Nov. 1932 fl. & fr., *Mrs. Tweedie* A.2. East Elgon, 2850 m., by stream in forest, Jan. 1937 fl., *Mrs. Tweedie* 366 :—flowers a brilliant scarlet, plant up to 30 or 45 cm. high. East Elgon, 3240 m., on river bank in the tree-heath belt, grass and woodland, Jan. 1937 fl., *Mrs. Tweedie* 637 (type) :—lovely pink and white flowers. Mt. Elgon, about 3240 m., Feb. 1937 fl., *Mrs. Tweedie* 367A. (in spirit).

THYMELAEACEAE.

Lasiosiphon mollissimus *E. A. Bruce*, sp. nov. [Thymelaeaceae] ; affinis *L. Hoepfneriano* Vatke, sed capitulis majoribus sessilibus vel subsessilibus, involucri bracteis oblongis vel ellipticis apice rotundatis vel subacutis nonnunquam apiculatis haud acuminatis differt ; a *L. polyantho* Gilg involucri bracteis latioribus, calycis tubo breviore distinguendus.

Suffrutex. *Caules* multi, erecti, lignosi, brunnei, simplices vel parce ramosi, basi 3–5 mm. diametro, parce et molliter albido-pilosi. *Folia* spiraliter orta, sessilia vel subsessilia, congesta, oblonga vel oblanceolata, 2·5–3·5 cm. longa, 0·8–1 cm. lata, basin versus sensim angustata, apice subacuta interdum apiculata, utrinque et margine adpresse albido-sericeo-pilosa, supra nervis plus minusve inconspicuis, subtus costa media inferne prominula. *Capitula* terminalia, circiter 50-flora, sessilia vel subsessilia, 3·5–4·5 cm. diametro. *Involucri bracteae* circiter 10, imbricatae, oblongae vel ellipticae, foliis breviores, 1·3–1·7 cm. longae, 0·7–1·1 cm. latae, extra dense adpresse sericeo-pilosae, intus inferne brunneae glabraeque, superne breviter albido-tomentosae. *Flores* 5-meri, sessiles. *Calycis tubus* angustato-cylindricus, 1·4–1·7 cm. longus, vix 1·5 mm. diametro sed infra faucem (ubi stamina inserta) 2 mm. et basin versus (circa ovarium) 2·5 mm. ampliatus, 7 mm. supra basin articulatus, supra articulum dense adscendente albido-sericeo-pilosus, infra densissime adscendente penicillatus ; calycis lobi flavidi, patentes, oblongi vel oblongo-elliptici, circiter 3 mm. longi, 2·5 mm. lati, apice late

rotundati vel emarginati, extra secus medium parce sericeo-pilosi, ceterum glabrescentes, intus glabri. *Petala* membranacea, ovata vel ovato-orbiculata, circiter 1·5 mm. longa, basi rotundata, apice rotundata plerumque abrupte breviterque acuminata. *Stamina* 10, biseriata, seriei superioris breviter exserta, inferioris in tubo faucem versus inserta; antherae sessiles vel subsessiles, circiter 1 mm. longae. *Ovarium* angustato-ellipsoideum, 3–4 mm. longum, circiter 1 mm. diametro, superne parce adscendente pilosum, inferne glabrum, in stylum sensim angustatum; stylus circiter 1 cm. longus, 3 mm. supra basin articulatus, stigmate, globoso 0·5 mm. diametro.

Northern Rhodesia. Abercorn District. Near Malombe, on the road to Kambole, in short grass and "dambo" on plateau in *Brachystegia* forest, 1650–1800 m., 2 June 1936, *Burtt* 6115 (type) :—clumps of yellow flowers. In small seasonal swamps or "dambo" in high plateau country, *Burtt* 6111 :—clumps of honey-scented, orange flowers. On road to Issanga Estate, in stunted *Brachystegia* woodland on hill-tops, 1500 m., 21 April 1936, *Burtt* 6108 :—clumps of ochre-yellow flowers.

Euphorbiaceae.*

Euphorbia Daviesii *E. A. Bruce*, nom. nov.—*Euphorbia imbricata* E. A. Bruce in Kew Bull. 1933, 468, non *E. imbricata* Vahl Symb. Bot. **2**, 54 (1791).

Monadenium magnificum *E. A. Bruce*, sp. nov. [Euphorbiaceae]; affinis *M. asperrimo* Pax sed foliis majoribus caulis apicem versus aggregatis, pedunculis longioribus differt.

Planta 0·6–1·5 m. alta. *Radix* verosimiliter tuberosa. *Caules* 1–4 e radice orti, erecti, succulenti, 4 vel 5-angulati, apice circiter 2 cm. basin versus angustati 1–1·5 cm. diametro, cicatricibus foliorum paucis semi-orbicularibus 6 mm. diametro ornati; anguli caulis aculeati, aculeis rubris basi plerumque contiguis angustato-conicis 1–3 mm. longis induratis interdum furcatis. *Folia* viridia demum rubescentia 5 vel 6 apice caulis aggregata, sessilia, late elliptica vel obovata, 10–15 cm. longa, 6–10 cm. lata, glabra, apice rotundata, basi angustata, margine minutissime aculeato-denticulata, costa media infra aculeato-alata, nervis lateralibus inconspicuis. *Dichasia* pluria, apice caulis aggregata; pedunculi primarii 9–14 cm., secundarii 3–5 cm., tertiarii 1–3 cm., ultimi 0·5–1 cm. longi, omnes glabri, tetragoni, 3–5 mm. diametro, angulis aculeatis; bracteae late oblongae, vix 1 cm. longae, 4 mm. latae, dorso angustato-undulato-alatae; prophyllum cyathii speciosum, coccineum, oblongo-lanceolatum, 8 mm. longum, 4 mm. latum, glabrum, apice rotundatum vel subtruncatum, dorso aculeato-alatum. *Cyathium* prophyllo brevius, circiter 6 mm. longum, cupuliforme, glabrum, latere anteriore vix usque medium aperto, lobos interiores subquadratos fimbiatos superans, margine paullo incrassato. *Ovarium*

* For *Macaranga Dawei* see *Myricaceae* p. 53.

exsertum, reflexum, glabrum, 4 mm. longum et latum, 3-angulatum. *Styli* 1 mm. longi, triente inferiore connati, apice bilobati. *Capsula* 3-angulata, circiter 5 mm. longa, 4 mm. lata, angulis angustissimis alatis. *Semina* oblonga, tetragona, basi et apice truncata, albescentia, tuberculata.

Tanganyika Territory. Gulwe Valley, near Mpwapa, 11 July 1937, fl. and fr., *Burtt* 6597 (type) :—a succulent 0·6–0·9 m. high, stem 4- to 5-angled with double spiny processes along the angles ; leaves green, turning red with age ; flowers scarlet and remarkably spectacular, borne at the apex of the stem ; 990 m., in *Commiphora-Acacia* bush in open seasonally flooded glades, 26 April 1932, fl., *Burtt* 3914 :—stem spiny, 4-angular, 0·6–0·9 m. high, with a crown of 5 or 6 green, lanceolate leaves ; flower-spike crimson lake. Dodoma Province : Gulwe, 840 m., common but scattered in *Commiphora*-Bush-Formation, 19 Aug., fl. and fr., *Greenway* 2408 :—Slender stemmed succulent plant up to 1·2 or 1·5 m. high, with red flowers ; stems not much branched, angular with numerous small red branched spines. Iringa Province : Pawaga District, 780–900 m., May-June 1936, fl. and fr., *Ward* P. 16.

Mr. Greenway notes that under cultivation 3 or 4 stems are produced and the plant has a somewhat bushy head 0·6–0·9 m. high.

Papilionaceae.

Crotalaria diloloënsis *Bak. f.* in Rev. Zool. Bot. Afr. **21,** 297 (1932). *C. praecox* Milne-Redhead in Hook. Ic. Pl. **33**, t. 3244 (1934).

Belgian Congo. Dilolo, *de Witte* 626 (type in Brussels Herb.).

Northern Rhodesia. Mwinilunga District. In open space in *Brachystegia* woodland, after grass fire, near Matonchi Farm, 1 Sept. 1930, *Milne-Redhead* 1010 (type of *C. praecox*) :—perennial herb with running habit and thick rhizome ; flowers yellow with purple veinings ; old unburnt shoots much longer than young flowering shoots. Slope above Kalenda dambo west of Matonchi Farm, in open ground after burning, 8 Oct. 1937, *Milne-Redhead* 2639 :—perennial with running rootstock ; leaves rather glaucous ; flowers yellow marked with reddish-brown ; fruits unripe. Slope above Kalenda dambo west of Matonchi Farm, among *Lannea humilis, Sphenostylis erecta*, grasses, etc., 14 Febr. 1938, *Milne-Redhead* 2639A :—plants hidden by grass, not in flower ; leafy shoots 12–14 inches long. Near Kalene Hill, in scrub near edge of plain, Nov., *Miss Marks* 12 :—plant 6–8 inches high, grows in clumps ; flowers yellow. E. M-R.

Crotalaria Elisabethae *Bak. f.* in Journ. Linn. Soc. Bot. **42,** 301 (1914). *C. mumbwae* Bak. f. in Journ. Linn. Soc. Bot. **42,** 300 (1914), synon. nov.

Belgian Congo. Elisabethville, in bush savannah, 17 May 1912, *Bequaert* 46 (type in Brussels Herb.). Elisabethville, 1927, *Quarré* 261.

Northern Rhodesia. Solwezi District. In *Brachystegia* woodland near Mutanda Bridge, 20 June 1930, *Milne-Redhead* 542 :—erect annual 6–9 dm. high. On stony waste ground at quarry near Mutanda Bridge, 21 June 1930, *Milne-Redhead* 567 :—erect branched annual, 3 dm. high ; flowers yellow and purple-brown. Mumbwa District. Near Mumbwa, *Mrs. Macaulay* 399 (type of *C. mumbwae* Bak. f.), 736, 801 :—flowers yellow.

The additional gatherings now available show these species to be conspecific, though considerable variation is noticeable in the size and habit of the plants. The degree of indumentum on the calyx and petals is also rather variable. The type specimen of *C. mumbwae* is in fruit : the only keel petals remaining appear withered, which would account for the difference in sizes given in the descriptions, and used as a distinguishing character in the key.

E. M-R.

Myricaceae.

The type specimen of *Macaranga Dawei* Prain, *Dawe* 595, has been dissected and proves to be synonymous with *Myrica salicifolia* Hochst. ex A. Rich. Prain in his diagnosis of *M. Dawei* in Kew Bull. 1911, 232 states :—" species nulli africanae arcte affinis "—so he evidently thought his new species was very distinct from the other species of *Macaranga*. Unfortunately neither female flowers nor fruits were present on the specimen, for if these had been available there would have been no doubt that the plant was not a member of the *Euphorbiaceae*. In reviewing the species of *Myrica* in connexion with the above problem, it is considered that *M. kilimandscharica* Engl. and *M. salicifolia* Hochst. ex A. Rich. are synonymous. Engler in describing the former species separated it from *M. salicifolia* on the character of the male flowers being *single* in the axils of the bracts. This character, however, is not constant. In the Flora of Tropical Africa the species are separated on leaf characters and on the density of lenticellation of the branches, neither of which characters seems to be very satisfactory. The shape, size and dentation of the leaf is very variable, as was mentioned by A. Richard in a note following his description of *M. salicifolia*, so that this cannot be taken as a character of specific importance. The synonymy is therefore as follows :—**Myrica salicifolia** *Hochst. ex A. Rich.*, Tent. Fl. Abyss. **2,** 277 (1851). *M. kilimandscharica* Engl., Hochgebirgsfl. Trop. Afr. 188 (1892). *M. kilimandscharica* Engl. var. *macrophylla* Engl. Jahrb. **28,** 375 (1900). *Macaranga Dawei* Prain in Kew Bull. 1911, 232. It is most probable that *Myrica salicifolia* Hochst. ex A. Rich. var. *subalpina* Engl. should be included under the above synonymy. Specimens from the type locality have been examined, but not the type numbers of the variety.

E. A. B.

Rutaceae.

Aeglopsis Eggelingii *M. R. F. Taylor*, sp. nov. [Rutaceae] ; ab *A. Chevalieri* Swingle habitu fruticoso, spinis axillaribus

nonnunquam binatis, pedicellis bracteatis, alabastris globosis, petalis 3 vel 4 ovatis nunquam lanceolatis, stamina petalis triplo numerosiora, ovario 7- vel 8-loculari differt.

Frutex ramosus, 4 m. altus, armatus, glaber. *Rami* teretes, juniores compressi, brunnei, internodiis 2–4 cm. longis, spinis axillaribus solitariis vel binatis 2–3 cm. longis rigidis rectis patentibus. *Folia* simplicia, alterna, subcoriacea ; petiolus 5–8 mm. longus, canaliculatus, pulvinatus ; lamina ovata vel ovato-lanceolata, 7–14 cm. longa, 3–5·5 cm. lata, apice obtusa vel acuta vel saepe acuminata, basi sensim cuneata, margine leviter et irregulariter crenata, supra fusco-viridis, subtus pallido-viridis, utrinque dense pellucido-punctata, costa prominente, nervis lateralibus utrinsecus 7–10 patentibus arcuatis. *Inflorescentiae* axillares, pauciflorae (circiter 5) ; pedunculi irregulariter ramosi, ramis brevissimis (usque 3 mm. longis) ; pedicelli 3 mm. longi, ampliati, bibracteati, glanduloso-punctati ; bracteae ovato-lanceolatae, 1 mm. longae, obtusae. *Flores* 1·5–2·5 cm. diametro, viridi-albi ; alabastra globosa vel leviter 3–4-lobata, circiter 4 mm. diametro. *Petala* 3–4, ovata, 1 cm. longa, 7–8 mm. lata, apice obtusa, basi truncata, crassa, glanduloso-punctata, supra longitudinaliter striata, margine apicem versus saepe leviter incurva. *Stamina* 9–12 (petalis triplo numerosiora) ; filamenta liguliformia, apicem versus attenuata, circiter 5 mm. longa, 1 mm. lata, compressa, crassa, incurva, connectivo apice glanduloso ; antherae oblongae, 2 mm. longae, circiter 1 mm. latae. *Discus* annularis, 5–6 mm. diametro, 1·5–2 mm. altus, lobatus, sulcatus. *Ovarium* ovoideum, 3–4 mm. longum, 2–3 mm. diametro, basi in disco immersum, loculis 7–8, ovulis numerosis. *Stylus* 2 mm. longus, 1 mm. diametro, teres ; stigma cylindricum, circiter 1·5 mm. diametro. *Fructus* subpyriformis, 9–11 cm. longus, 7–8 cm. diametro, odoratus, cortice sublignoso, 7-locularis, loculis amplis triangularibus polyspermis. *Semina* subellipsoidea, 1–1·5 cm. longa, 8 mm. lata, compressa.

Anglo Egyptian Sudan. Mongalla Province : Lado, Yei River, 23 October, 1919 (fruit), *F. Sillitoe* 303 :—Small tree, very spinous, no flowers.

Uganda. Bunyoro District : Siba Forest, on forest edge, May 1936 (flowers). *W. J. Eggeling* 3006 (type) :—A spiny bush 4 m. high ; spines straight and sharp, leaves and flower buds gland-dotted, flowers whitish green with 3 or 4 petals. Budongo, spiny shrub on forest edge, November, 1935 (fruit), *W. J. Eggeling* 2310 :—Leaves gland-dotted, fruit pear-shaped, woody, very like that of *Balsamocitrus Dawei* inside, and with a similar though less strong odour.

Oleaceae.

Linociera latipetala *M. R. F. Taylor*, sp. nov. [Oleaceae] ; ab omnibus speciebus africanis pedunculis et pedicellis longioribus valde patentibus, lobis corollae latioribus facile distinguenda.

Arbor vel frutex scandens, valde ramosus, usque 13 m. altus. *Ramuli* glabri, plus minusve teretes, rigidi, patentes, cortice pallide

griseo-brunneo. *Folia* opposita ; petiolus 5–6 mm. longus, basin versus dilatatus, supra canaliculatus ; lamina coriacea, elliptica vel anguste obovata, basi sensim angustata, apice caudata, 10–13·5 cm. longa, 3–5·5 cm. lata, utrinque glabra, margine integra, costa et nervis supra impressis subtus prominentibus, nervis lateralibus utrinsecus 4–8 procul a margine arcuatim confluentibus ; domatia saepe in axillis nervorum lateralium obvia. *Inflorescentiae* paniculatae, ex axillis foliorum pedunculatae, patentes, 7–13-florae ; pedunculi glabri, flexuosi, usque 7 cm. longi ; bracteae usque 1 mm. longae, ovatae, villoso-pubescentes ; pedicelli 1–2 cm. longi, valde patentes, apicem versus sensim dilatati, saepe bibracteolati, bracteolis ovatis minutis. *Flores* intus flavo-albidi, extra pallide rosei ; alabastra late ovoidea, sparse pubescentia. *Calyx* tenuiter cupuliformis vel patelliformis, extra leviter pubescens, crassus, lobis 4 patentibus latissime triangulatis 0·5–1 mm. longis 2–2·5 mm. latis. *Corolla* 4-lobata ; lobi induplicato-valvati, alternatim altius et brevius connati, itaque sinus oppositi duo altiores duo breviores, subcarnosi, ovati vel elliptici, apice obtusi vel acuti, 7–8 mm. longi, 4–5 mm. lati. *Stamina* 2 ; filamenta compressa, circiter 2 mm. longa, inter corollae lobos altius connatos inserta ; antherae reniformes, 2 mm. longae. *Ovarium* glabrum, biloculare, subglobosum, in stylum sensim attenuatum, 1·5–2 mm. altum, 1–1·5 mm. diametro ; ovula pro loculo 1–2 ; stylus crassus, profunde 4-sulcatus vel subalatus, 1–1·5 mm. longus ; stigma subcapitatum, demum mitriforme, 0·5 mm. longum, sparse pubescens. *Drupae* anguste ovoideae vel ellipsoideae, 1-loculae, usque 1·5 cm. longae, 1 cm. diametro, coccineae, stylis persistentibus. *Semen* 1.

Uganda. Ankole district : Lake Lutoto, west of Ankole, at water's edge, August 1936, *W. J. Eggeling* 3186 (type) :—climber or scandent bush ; flowers with 4 petals, sub-fleshy, white-yellow within, pink outside. Bagube, in forest swamp, 1300 m., September, 1922, *R. A. Dummer* 5478 :—evergreen tree, 8 m. high ; flowers yellowish ; rare.

Kenya. Kericho forest, 2330 m., *E. Battiscombe* 1303 (fruiting material) :—a small tree, 6 m. high ; fruits bright red, no flowers seen ; only one specimen seen.

Tanganyika. Arusha district : South slope of Mt. Kilimanjaro between Umbwe and Weu Weru rivers, in Macaranga-Maesa forest at 1900 m. 1st September, 1932, *P. J. Greenway* 3222 :—a much branched evergreen tree up to 19 m. high, with green flowers ; not common.

Asclepiadaceae.

Asclepias pauciflora (*Klotzsch*) *E. A. Bruce*, comb. nov.—*Gomphocarpus pauciflorus* Klotzsch in Peters, Reise Mossamb. Bot. 276 (1861). *Stathmostelma pauciflorum* (Klotzsch) K. Schum. in Engl. Jahrb. **17,** 132 (1893). *S. reflexum* Britten et Rendle in Trans. Linn. Soc. ser. 2, **4,** 27, t.6, figs. 4–6 (1894). *Asclepias reflexa* (Britten et Rendle) [Britten et Rendle (1894), nomen provisor.] N.E. Br. in Fl. Trop. Afr. **4,** pt. 1, 344 (1902).

Pentas pseudomagnifica *M. R. F. Taylor*, sp. nov. [Rubiaceae] ; a *P. longituba* K. Schum. habitu graciliore, foliis minoribus manifesto longius petiolatis subtus nervis tantum asperiuscule pilosis, stipulorum fimbriis tenuissimis, calycis dentibus sursum spatulato-ampliatis vel interdum subfoliaceis haud subulatis, corollae tubo manifesto breviore, lobis minoribus satis distincta.

Frutex vel *suffrutex*, ramosus, usque 1 m. altus ; caules teretes, breviter griseo- et crispato-subtomentelli, internodiis superne circiter 2–5 cm. longis. *Folia* petiolata, petiolo 0·5–1 cm. longo asperulo-pubescente ; lamina anguste ovata, superne sensim angustata vel acuminata, apice acuta, basi cuneata, 4–8 cm. longa, 1·5–2·5 cm. lata, supra leviter asperulo-pilosa, subtus praesertim in costa et nervis lateralibus asperiuscule pilosa, nervis lateralibus subtus prominentissimis utrinsecus 7–11 ; stipulae breviter connatae, inter petiolos in lobos 4–6 usque 1·5 cm. longos apice glandulosos tenuissime filiformes divisae. *Cymae* terminales, e basi 3-ramosae subtomentellae, 1·5–4 cm. longae, apice irregulariter breviter ramulosae, 2–4-florae. *Flores* pentameri, albi, subsessiles vel breviter pedicellati, pedicellis usque 0·5 cm. longis. *Calyx* (receptaculo incluso) campanulatus, molliter pubescens ; tubus 4–5 mm. longus, 3–4 mm. diametro, apice inter lobos glandulis 1–3 parvulis ornatus ; lobi 5, spatulato-ampliati vel subfoliacei, apice acuti, 1–1·7 cm. longi et usque 5 mm. lati. *Corolla* longissime tubulosa ; tubus 10–13 cm. longus, circiter 2 mm. diametro, sursum leviter dilatatus, extra pilis griseis crispato-subtomentosus, intus fauce et parte dilatata plus minusve dense et longe villosus, deorsum glabrescens et longitudinaliter striatus ; lobi 5, patentes, anguste ovati, subacuti, 1–1·5 cm. longi, 5–7 mm. lati, extra pubescentes, intus glabri. *Stamina* 5, in parte tubi dilatata inclusa ; antherae lineares, basi sagittatae, basin versus dorsifixae, subsessiles, glabrae, 8–8·5 mm. longae. *Ovarium* biloculare, placentis peltatis. *Stylus* 11–14 cm. longus, usque 1 cm. longus exsertus, superne lepidoto-puberulus, inferne glabrescens, apice stigmatosus, dilatatus, bilobatus, lobis 1·5 mm. longis. *Capsula* non visa.

TANGANYIKA TERRITORY. Morogoro District : Uluguru Mts., Lupanga Peak, 2060 m., 10 Dec. 1933, *B. D. Burtt* 4979 (type) :—Secondary shrub on mountain summit with handsome white tubular flowers. Same locality, 2340 m., 26 Dec. 1931, *B. D. Burtt* 3480 :—shrubby herb with dark green foliage and long tubular white flowers, rare. Same locality, near summit, 2330 m., 23rd Dec. 1933, *A. P. G. Michelmore* 857. Lukwangule Plateau, on the edge of mountain forest, 2400 m., 28 Nov. 1898, *W. Goetze* 258 (in Herb. Berol.) :—subshrub about 1 m. high with white flowers reddish on the outside. Same locality, in grassland on plateau, 2660 m., 30 Jan. 1935, *Miss E. M. Bruce* 701 :—0·5–1 m. shrub with showy white flowers, occasional.

All the specimens cited possess long-styled flowers, but doubtless heterostyly exists in this species as in the closely allied *P. graniticola* E. A. Bruce, of which both long- and short-styled specimens are preserved in the Kew Herbarium.

Pentas longituba *K. Schum.* var. **magnifica** (*Bullock*) *Bullock et M. R. F. Taylor*, stat. nov. *P. magnifica* Bullock in Hook. Ic. Pl. t.3265 (1935).

The description of this plant as a new species was due to a specimen (*Goetze* 852) in the Kew Herbarium from the Livingstone Mtns., having been wrongly labelled "P. longituba" by K. Schumann. Examination of the type of *P. longituba* (*Holst* 418), kindly sent on loan to Kew from Berlin, reveals that although *P. magnifica* is slightly different in facies and in various minor floral details, the differences are not sufficient to warrant specific distinction. This species is accordingly reduced to varietal rank. The *Goetze* specimen has now been identified as *P. nobilis* S. Moore (Journ. Bot. **46,** 37 : 1908).

Vangueriopsis (§ Calycophyllae) **Sillitoei** *Bullock*, sp. nov. [Rubiaceae] ; a *V. discolori* (Benth.) Robyns inflorescentiis multo majoribus pedunculis satis crassis multo longioribus, calycis lobis minoribus haud foliaceis, corollae tubo breviore recedit.

Frutex scandens, ut videtur inermis. *Rami* annotini teretes, internodiis 6–7 cm. longis, cortice rubro-brunneo, parce lenticellato, hornotini glabrati, interdum pilis strictis adpressis levissime strigosi. *Stipulae* subpersistentes, e basi latiuscula 2 mm. vaginatim connatae, subulatae, extra glabrae, intus villosae, caudis carinatis 6–8 mm. attingentibus terminatae. *Folia* petiolata, discoloria, anguste oblongo-elliptica, 6–8 cm. longa, usque 2·5 cm. lata, apice late cuspidata, basi subacuta, supra viridia et pilis strigosis levissime obtecta, subtus albicantia et costa nervisque tantum similiter strigosa, nervis venisque subtus reticulatis ; petioli 5–8 mm. longi. *Cymae* divaricatae, ex axillis foliorum delapsorum ortae, dichasialiter ramosae, multiflorae ; pedunculi 2·5–3 cm. longi, ramis primariis 1–2 cm. longis, glabri vel pilis paucis levissime strigosi ; bracteae deciduae, lineari-oblongae, 1–1·5 mm. longae vel minores. *Calyx* (hypanthio incluso) cupuliformis vel obconicus, circiter 1·5 mm. longus, limbo brevissimo subtruncato vel 5-denticulato, denticulis late triangularibus. *Corolla* alba ; tubus cylindricus, 3 mm. longus, fauce villosus, ceterum glaber ; lobi 5, ut videtur sub anthesi reflexi, triangulares, circiter 2 mm. longi, apice acuti, cucullati. *Stamina* fauce inserta, filamentis filiformibus brevissimis ; antherae exsertae, reflexae, oblongae, apice brevissime acute appendiculatae, basi thecis sagittato-divergentibus. *Stylus* filiformis, 4·5 mm. longus, basi leviter bulboso-expansus ; stigma exsertum, capitato-mitriforme, 1 mm. longum, apice bilobum. *Discus* carnosus, annularis. *Ovarium* parvum, vix 1 mm. longum. *Fructus* valde immaturi globosi, maturi non visi.

Anglo-Egyptian Sudan. Yei River, Lado, *Sillitoe* 377 :— Strong scandent shrub ; [flowers] white.

Although the available material of this species is poor, it has been described with a view to its inclusion in a check-list of Sudanese trees and shrubs now in course of preparation by Major G. Aylmer, lately of the Sudan Forestry Department. It constitutes a new generic record for the Sudan, its nearest ally, *V. discolor* (Benth.) Robyns, being confined to West Tropical Africa, where it is found in Sierra Leone, French Guinea, and Ivory Coast.

Vangueriopsis discolor and *V. Sillitoei* differ from all other species of the genus in their discolorous leaves, which are markedly reticulate on the lower surface, and they may constitute a distinct genus intermediate between *Rytigynia* Blume and *Vangueriopsis* Robyns. Other species of the section *Calycophyllae* Robyns* seem to be more or less intermediate between *Vangueriopsis* and *Canthium* Lam.

Compositae.

Erlangea (Bothriocline) **auriculata** *M. R. F. Taylor*, sp. nov. (Compositae-Vernonieae) ; ab *E. amplexicaula* Muschler habitu elatiore, foliis siccitate nigrescentibus auriculatis lanceolatis majoribus, inflorescentiis laxius dispositis capitulis campanulatis differt ; ab *E. imatongensi* M. R. F. Taylor omnibus partibus majoribus, foliis auriculatis, involucri bracteis omnibus paleaceis exterioribus dense villosis valde distincta.

Herba lignosa vel suffrutex usque 4 m. altus. *Rami* patentes, teretes, leviter sulcati, apicem versus plus minusve dense flavo-brunneo-villosi, internodiis parte superiore 4–6 cm. longis. *Folia* opposita, decussata, sessilia, basi dilatata, connata ; lamina lanceolata, basi auriculata, apice sensim acuta, 10–15 cm. longa, 3·5–5 cm. lata, supra in statu sicco suffusco-nigra leviter villosa demum glabrescens, costa dense flavido-villosa, subtus dense flavido- vel griseo-tomentosa, margine irregulariter dentato-serrata, nervis lateralibus numerosis arcuantibus. *Inflorescentia* terminalis vel axillaris, valde ramosa, paniculato-corymbosa ; rami patentes, teretes, dense flavido-brunneo-villosi, bracteati ; bracteae foliis subsimiles sed minores ; capitula subsessilia, 2–6 in glomerulis pedunculatis disposita ; pedunculi 3–9 mm. longi. *Capitula* campanulata, circiter 6 mm. longa, 3 mm. diametro, floribus 12–15 instructa. *Involucri bracteae* 3–4-seriatae, imbricatae, omnino paleaceae ; bracteae exteriores ovato-lanceolatae vel late lanceolatae, 2·5–4 mm. longae, 1–2 mm. latae, apice acutae, dense flavido-villosae vel apicem versus villosae ; interiores late lanceolatae vel lineares, 4–5 mm. longae, 1·75–0·5 mm. latae, apice acutae vel acuminatae, interdum leviter reflexae, glabrae. *Corollae* ex involucro exsertae, pallidissime purpureae, circiter 6 mm. longae ; tubus infundibuliformis, 3·5–4 mm. longus ; lobi lineares, 2–2·5 mm. longi, acuti. *Filamenta* 1 mm. longa. *Antherae* vix exsertae,

* Robyns in Bull. Jard. Bot. Brux. **11**, 248 et seq. (1928).

1·75 mm. longae, basi rotundatae, apice acuminatae, membranaceae. *Stylus* cum stigmate usque 8 mm. longus ; lobi stigmatis circiter 2 mm. longis, subulatis, adpresse sericeo-pubescentibus. *Achaenia matura* turbinata vel oblonga, crassa, glabra, angulata, 1·25 mm. longa, 0·5–0·75 mm. lata, 7–9-costata, costis laevibus flavidis prominentibus, regionibus inter costas glandulis minutis brunneis obsitis. *Pappus* e setis 10–12 circiter 2 mm. longis stramineis erectis rigidis barbellatis caducissimis sistens.

Uganda. Bugishu District. Mt. Elgon, from open forest above Bulambuli camp, 3260–3500 m., 1930, *L. C. C. Liebenberg* 1584 (type) :—when supported by other vegetation the stems grow up to 3·5 m. ; flowers very light purple. Mt. Elgon, bamboo zone, 3000 m., Jan. 1918. *R. A. Dummer* 3563 :—Occasional ; up to 1·5 m., flowers lilac. Bulambuli, upper forest zone, 3260 m., 6 Sept. 1932, *A. S. Thomas* 653 :—Very common ; shrub, 4 m., spreading ; flowers mauve, in large umbels. Bulambuli, just below bamboo zone, 3000 m. 12 Nov. 1933. *B. H. Tothill* 2330 :—Occasional ; few in bloom ; coarse herb. 3 m. high, flowers mauve.

Erlangea (Bothriocline) **imatongensis** *M. R. F. Taylor*, sp. nov. [Compositae-Vernonieae] ; ab *E. amplexicauli* Muschler omnibus partibus fere glabris, foliis siccitate saepe nigrescentibus minoribus haud tomentosis, involucri bracteis reflexis valde distincta.

Herba lignosa, usque 2 m. alta. *Rami* erecti, subteretes, sulcati, apicem versus sparse sericeo-villosi, inferne demum glabrescentes, internodiis 1–2 cm. longis. *Folia* opposita, decussata, sessilia vel subsessilia, basi valde dilatata, connata ; lamina ovato-lanceolata vel lanceolata, basi subamplexicaulis, apice acuta, 4·5–7 cm. longa, 2–3 cm. lata, supra saepe in statu sicco suffusco-nigra vel fusco-olivacea, glabra, subtus pallido-olivacea, nervis leviter villosa, margine dentato-serrata, dentibus apice saepe crassis ; nervi laterales utrinsecus 10–14, leviter arcuati, venis dense reticulatis. *Inflorescentia* terminalis, corymbosa, valde ramosa ; rami patentes, angulati, dense sericeo-villosi, bracteati ; bracteae foliis subsimiles sed minores ; capitula 3–6 in glomerulis fasciculatis spissis disposita. *Capitula* 8–12-flora, subcylindrica, 4–6 mm. longa, 2·5–3 mm. diametro. *Involucri bracteae* 3–4-seriatae, imbricatae, pallide virides, demum paleaceae ; bracteae exteriores ovatae, 1·5–2 mm. longae, 0·75–1·25 mm. latae, margine scariosae, sparse tomentosae ; interiores ovato-lanceolatae vel lanceolatae, 3–4 mm. longae, 1–1·6 mm. latae, apice obtusae vel acutae, reflexae, margine late scariosae, apicem versus saepe minute serratae, glabrae. *Corollae* ex involucro leviter exsertae, pallide purpureae, basin versus sparsissime piloso-glandulosae, 4·5–5 mm. longae ; tubus apicem versus ampliatus, circiter 3 mm. longus ; lobi lineares, circiter 1·75 mm. longi, obtusi. *Filamenta* circiter 1·5 mm. longa. *Antherae* vix exsertae, 1·5 mm. longae, apice acutae, membranaceae, basi rotundatae. *Stylus* cum stigmate usque 6 mm. longus ; lobi stigmatis circiter 1 mm. longi, filiformes, adpresse sericeo-pubescentes.

Achaenia matura turbinata vel oblonga, crassa, glabra, angulata, 1·5–2 mm. longa, 1–1·25 mm. lata, 8–10-costata, costis laevibus flavidis prominentibus, regionibus inter costas glandulis minutis brunneis obsitis. *Pappi setae* 20–25, rigidae, 1·5–2 mm. longae, barbellatae, caducae.

Anglo-Egyptian Sudan. Imatong Mountains : Kippia, common in ravines, about 2916 m., 11 Febr. 1929, *T. F. Chipp* 92 (type) :— heliotrope flowered composite, 2 m. high. Rocky summit of Mt. Kineti, 330 m., 30 Dec. 1935, *A. S. Thomas* 1836 :—Abundant in scrub : subshrubby, height 1 m., flowers mauve. Mongalla, 1 Jan. 1936, *H. B. Johnston* 1449. No locality, 2330 m., 10 Febr. 1936, *H. B. Johnston* 1485. No locality, 3163 m., 12 Febr. 1936, *H. B. Johnston* 1522. No locality, 2633 m., 10 Febr. 1936, *H. B. Johnston* 1532.

Pentzia schistostephioides *M. R. F. Taylor*, sp. nov. [Compositae]; a *P. sabulosae* (Wolley-Dod) Hutch. habitu erecto, regione florifera tantum ramosa, omnibus partibus lanato-tomentosis, foliis saepe bipinnatisectis siccitate marginibus revolutis, capitulis minoribus numerosioribus, pappi squamis linearibus inter se distinctis facile distinguenda.

Herba perennis, aromatica, basi lignosa, erecta, usque 2 m. alta, apicem versus (regione florifera) ramosa ; caules crassi, teretes, longitudinaliter striati, griseo- vel albido-lanati, internodiis 1-2 cm. longis. *Folia* ambitu ovata vel late lanceolata, 3–7 cm. longa, 1–4 cm. lata, pinnatisecta, utrinque lanato-tomentosa, infra costa et nervis lateralibus prominentibus, basi auriculata, segmentis utrinsecus 4–7 oppositis 3–7-lobatis, lobis ultimis oblongis apice rotundatis 1-nerviis marginibus integris valde revolutis. *Inflorescentiae* terminales, compactae, corymbosae, capitulis numerosis ; rami inflorescentiarum crassi, dense lanati, ex axillis foliorum valde redactorum orti, et bracteis foliaceis paucis integris 3–5 mm. longis praediti ; pedunculi graciles, 2–4 mm. longi, apice ramorum dense conferti. *Capitula* subglobosa, circiter 4 mm. alta et 5 mm. lata, discoidea, homogama, flava. *Involucri bracteae* 3–4-seriatae, imbricatae ; exteriores 1 mm. longae, lineares, paucae ; intermediae 2–2·5 mm. longae, lineari-lanceolatae, acutae, marginibus scariosis laciniatis ; interiores oblongae vel spatulatae, 2–3 mm. longae, 0·5 mm. latae, obtusae, marginibus late scariosis nonnunquam laciniatis ; receptaculum convexum, alveolatum. *Flores* circiter 70. *Corollae tubus* 2–2·5 mm. longus, inferne cylindricus et parce glandulosus, superne ampliatus, subcampanulatus vel campanulatus, glaber. *Corollae lobi* 5, carnosi, globosi, glabri, 0·25 mm. diametro. *Antherae* 1 mm. longae, basi rotundatae. *Stigmata* 0·2 mm. longa, truncata, crassa. *Achaenia* immatura 1–1·5 mm. longa, crassa, basin versus angustata, leviter costata, glabra ; pappi squamae circiter 10, lineares, 0·25 mm. longae, uniseriatae, inter se distinctae.

S. Rhodesia. Inyanga, 2000 m., 19 October 1935, *F. Eyles* 8479 (type) :—plant 5–6 ft., by water. Inyanga Downs, 1660–2000 m., September 1934, *F. Eyles* 7927.

This very distinct species extends the range of the genus, hitherto almost exclusively South African, to Southern Rhodesia. The erect, woody, almost unbranched stems, comparatively large deeply divided leaves and dense many-headed corymbs give it the appearance of the allied genus *Schistostephium*, hence the specific name. This species falls into the section *Corymbosae* (see Hutchinson in Kew Bulletin 1916, p. 241 et seq.).

Pleiotaxis argentea *M. R. F. Taylor*, sp. nov. [Compositae-Mutisieae] ; a *P. arenaria* Milne-Redhead racemis haud axillaribus, capitulis majoribus, involucri phyllis majoribus acutis, foliis majoribus albo-tomentosis differt.

Suffrutex usque 1 m. altus. *Rami* divaricati, longitudinaliter striati, albido-araneo-tomentosi, inferne demum glabrescentes ; internodiis 1–2 cm. longis. *Folia* alterna, sessilia, elliptica vel ovato-elliptica, basi amplexicaulia, apice obtusa vel acuta, 5–8 cm. longa, 2·5–4 cm. lata, supra rugosa, griseo-araneosa, praecipue secus nervos, infra dense albo-araneosa, margine dentata, dentibus interdum breviter calloso-spinosis ; nervi laterales utrinsecus 10–14, venis dense reticulatis supra impressis et subtus prominentibus. *Capitula* 1–4 in racemos terminales disposita, subcylindrica, vix 3 cm. longa, circiter 1 cm. lata, breviter pedunculata, pedunculis 1–3·5 cm. longis, bracteis paucis lineari-lanceolatis circiter 8 mm. longis. *Involucri bracteae* 4–5-seriatae, imbricatae, apicem versus sanguineae vel purpureae, margine inconspicue scariosae ; exteriores ovatae vel ovato-lanceolatae, 6–8 mm. longae, 3–4 mm. latae, basi crassae, apice acutae, dense araneo-tomentosae ; interiores lanceolatae, usque 1·8 cm. longae, 4 mm. latae, apice scariosae acutae vel acuminatae, leviter tomentosae demum glabrescentes. *Corollae* exsertae, pallido-sanguineae ; tubus 1·5 cm. longus, parte inferiore anguste cylindricus, parte superiore urceolatus, 2–3 mm. longus ; lobi attenuati, 4 mm. longi, reflexi. *Stamina* apice partis tubi inflatae affixa ; filamenta 2 mm. longa ; antherae exsertae, 5 mm. longae, caudis 1 mm. longis villosis. *Ovarium* angustum, circiter 5 mm. longum, dense adpresso-sericeo-villosum ; stylus circiter 1·8 cm. longus ; stigmatis lobi obtusi, 1 mm. longi. *Achaenia* immatura 1 cm. longa. *Pappi setae* pallide fulvae, 1·2 cm. longae, barbellatae.

Northern Rhodesia. Abercorn District : Lunzua Escarpment between Malombe and the Lunzua river, 2000 m., 2 June 1936, *B. D. Burtt* 6437 (type) :—Among rocks of steep rocky escarpment clothed with *Brachystegia microphylla*. A pale-scarlet flowered bushy perennial herb 1 m. high, with silvery green leaves. Locally common near summit.

Kleinia kleinioides (*Sch. Bip.*) *M. R. F. Taylor*, comb. nov. [Compositae-Senecioneae]. *Notonia kleinioides* Sch. Bip. in

Schweinf. Fl. Aethiop. **151** (1867); *Senecio kleinioides* Oliv. & Hiern. in Fl. Trop. Afr. **3,** 421 (1877); *Kleinia violacea* A. Berger in Monatschr. Kakt. **15,** 38 (1905).

BORAGINACEAE.

The type specimen of *Cordia unyorensis* Stapf (*Dawe* 798 from Uganda) described in Journ. Linn. Soc. **37,** 527 (1906), has been carefully examined and proves to be a mixture. The leaves and flowering shoots belong to *Cordia abyssinica* R.Br., whilst the detached fruits are those of *C. Milleni* Baker. The name is therefore discarded and in part referred to the synonymy of these two species. That of *C. Milleni* Bak. has been enlarged to include the following species, which appear to be conspecific :—**Cordia Milleni** *Bak.* in Kew Bull. 1894, 27. *C. longipes* Bak. l.c.; *C. chrysoclada* Bak. l.c.; *C. Irvingii* Bak. quoad *Dr. Rowland s.n.*, l.c. 1895, 113. *C. Liebrechtiana* De Wild. et Th. Dur. in Bull. Soc. Bot. Belg. **38,** 38 (1899). *C. unyorensis* Stapf, quoad fruct. *C. Yombomba* Vaupel in Engl. Jahrb. **48,** 526 (1912). *C. ugandensis* S. Moore in Journ. Bot. **54,** 288 (1916). E. A. B.

CONVOLVULACEAE.

Ipomoea latisepala *E. A. Bruce*, sp. nov. [Convolvulaceae]; affinis *I. nephrosepalae* Chiov. sed foliis basi cordatis breviter pubescentibus, bracteolis late ovatis vel suborbicularibus majoribus differt.

Suffrutex; rami pallido-brunnei vel cinerei, leviter striati, apicem versus griseo-tomentosi, inferne pubescentes demum glabrescentes, basi circiter 5 mm. diametro; internodia 1–2 cm. longi; nodi basibus crassis petiolorum cicatricosi. *Folia* petiolata; petiolus 1·5–3 cm. longus, tomentosus; lamina siccitate subflavescens, cordata vel ovato-cordata, basi late cordata, apice rotundata, 2–4 cm. longa, 1·5–4 cm. lata, utrinque tomentosa, margine integra vel leviter undulata; nervi laterales utrinsecus 4–6, supra impressi, subtus prominentes. *Flores* solitarii, in axillis foliorum superiorum pedicellati; pedicelli 1–1·5 cm. longi, dense tomentosi, apicem versus bracteolis duabus calycem includentibus; bracteolae membranaceae, late ovatae vel orbiculares, apice rotundatae nonnunquam apiculatae, basi brevissime unguiculatae, 1·2–1·8 cm. longae, 1·2–2 cm. latae, extra pubescentes, intus glabrae et conspicue venosae. *Calyx* membranaceus, usque ad basin 5-lobatus; lobi contorti, subaequales, transverse oblongo-elliptici, apice late rotundati vel subtruncati, basin versus angustati brevissime unguinculati, circiter 1 cm. longi et 1·5 cm. lati, extra sericeo-tomentosi, intus glabri et venosi. *Corolla* infundibuliformis, superne flava, inferne lilacina, 3–3·5 cm. longa, fauce 2–2·5 cm. diametro, alabastro sericeo-tomentoso, matura extra glabra cum vittis 5 pilosis circiter 4 mm. latis e basi ad apicem angustatis dentibus minutis terminatis. *Stamina* 5, 3–4 mm. supra basin corollae inserta; filamenta glabra, compressa, 1·2–1·3 cm. longa; antherae oblongae, 3·5 mm. longae,

basi breviter sagittatae. *Ovarium* hemisphaericum, 1·5 mm. altum, 2 mm. diametro, glabrum, disco annulari; stylus simplex, 1·2–1·4 cm. longus, per 2 mm. basin versus leviter ampliatus et basi supra ovarium constrictus; stigmata duo, globosa, vix 1 mm. crassa.

British Somaliland. Harradigit, 44° 31′ E., 7° 45′ N., 981 m., Nov. 1934, *Godding* 233 (type) :—small plant with yellow-mauve flowers: vernacular name " Defao."

Material of **Jacquemontia capitata** (*Desr.*) *G. Don* from the type locality, Senegal, has been compared with material and with the type figure of *Jacquemontia tamnifolia* (L.) Griseb. from South Carolina, North America. It is considered that the African species is synonymous with *J. tamnifolia* (L.) Griseb. This latter was founded on the pre-Linnean species *Volubilis carolinensis, tamnifolio subhirsuto* in Dill. Hort. Elth. 428, t. 318, fig. 410 (1732). The synonymy is as follows :—**Jacquemontia tamnifolia** (*L.*) *Griseb.* Fl. Brit. W. Ind. 474 (1861). *J. capitata* (Desr.) G. Don, Gen. Syst. **4**, 283 (1837). *J. capitata* (Desr.) G. Don var. *pauciflora* N.E. Br. in Dyer, Fl. Trop. Afr. **4,** pt. 2, 86 (1905). *Ipomoea tamnifolia* L. Sp. Pl. 162 (1753). *I. guineensis* G. Don, Gen. Syst. **4,** 269 (1837). *I. macropoda* Boj. Hort. Maur. 229 (1837). *I. capitata* Choisy in DC. Prodr. **9,** 365 (1845). *Convolvulus capitatus* Desr. in Lam. Encycl. **3,** 554 (1791). *C. tamnifolius* G. F. W. Mey. Prim. Fl. Esseq. 95 (1818). *C. guineënsis* Schum. et Thonn. Beskr. Guin. Pl. 90 (1827). *C. pycnantha* Hochst. ex Choisy in DC. Prodr. **9,** 365 (1845). E. A. B.

Scrophulariaceae.

Sutera *Roth*, Bot. Bemerk. 172 (1807).—There has been some slight confusion over this genus as it was reduced by Wildenow and later revived by Roth. In 1807 Roth[1] published the two species *Sutera foetida* and *S. brachiata*: the former was founded on *Buchnera foetida* Andr.[2] and is the type of the genus *Sutera*, the latter is a synonym of *Manulea hispida* Thunb.[3], for which the new combination *Sutera hispida* (Thunb.) Druce[4] has been made. In 1809 Wildenow[5] reduced *Sutera* to *Manulea*, but twelve years later, in 1821, Roth[6] revived the genus and added another species *Sutera glandulosa* Roth. This species is, however, synonymous with *Capraria dissecta* Del.[7] and the new combination *Sutera dissecta* (Del.) Walp.[8] was made. In 1836 Bentham[9] founded three new genera, *Chaenostoma, Lyperia* and *Sphenandra* and incorporated *Sutera foetida* and *Manulea hispida* in his genus *Chaenostoma*. In 1891 Kuntze[10] replaced Bentham's *Chaenostoma* into *Sutera* Roth (1807) and created a new genus, *Jamesbrittenia*[10], for the species

[1]Roth, Bot. Bemerk. 172 (1807). [2]Andr. Bot. Rep. **2,** t. 80 (1800). [3]Thunb. Prod. Pl. Cap. 102 (1800). [4]Druce, Rep. Bot. Exch. Cl. Brit. Isles, 1916, 649 (1917). [5]Willdenow, Enum. Plant. Hort. Berol. 653 (1809). [6]Roth, Nov. Pl. Spec. 291 (1821). [7]Del. Fl. Egypte, 95, t. 32, fig. 2 (1812). [8]Walp. Rep. **3,** 271 (1844). [9]Benth. in Hook. Comp. Bot. Mag. **1,** 374 (1836). [10]Kuntze, Rev. Gen. 461, 466 (1891).

founded on *Sutera glandulosa* Roth. In 1897 Diels[11] revived *Chaenostoma* but treated *Lyperia* and *Sphenandra* as sections of this genus. A few years later *Chaenostoma*, as conceived by Diels, was again reduced to *Sutera* by Hiern.[12] Hemsley and Skan[13] adhered to this arrangement, but still considered *Jamesbrittenia*, founded on *Sutera glandulosa*, to be a distinct genus. They separated this from *Sutera* on the character of the shortly two-lobed style. The type of *Jamesbrittenia* has been examined and the minutely bilobed style is present, but this is also present in *Sutera Elliotensis* Hiern, so cannot be taken as a separating generic character. There appear to be no characters on which *Jamesbrittenia* can be excluded from *Sutera* Roth 1807. *Sutera* Roth 1821 is therefore synonymous with *Sutera* Roth 1807 and the generic name *Jamesbrittenia* is not required and becomes a synonym :

Sutera dissecta (*Del.*) *Walp.* Rep. **3,** 271 (1844).
Sutera glandulosa Roth, Nov. Pl. Spec. 291 (1821).
Capraria dissecta Del. Fl. Egypte, 95, t. 32, fig. 2 (1812).
Jamesbrittenia dissecta Kuntze, Rev. Gen. 46 (1891).

E. A. B.

ACANTHACEAE.

Hypoëstes rosea *Beauv.* Fl. Oware & Ben. **2,** 66, t. 100 (1818) ; Nees in DC. Prodr. **11,** 506 (1847) ; Benth. in Hook. Niger Fl. 484 (1849), pro parte, quoad spec. Beauv. ; C. B. Cl. in Dyer, Fl. Trop. Afr. **5,** 248 (1900), pro parte, excl. descr., quoad spec. Beauv. ; Hutch. & Dalz. Fl. W. Trop. Afr. **2,** 268 (1931), excl. diagn., quoad spec. ex Benin. *H. Barteri* T. Anders. in Journ. Linn. Soc. Bot. **7,** 49 (1864) ; Lindau in Engl. & Prantl, Pflanzenfam. **4,** 313, 333 (1895) ; C. B. Cl. in Dyer, Fl. Trop. Afr. **5,** 246 (1900) ; S. Moore in Cat. Pl. Talb. Nig. 141 (1913) ; Hutch. & Dalz. Fl. W. Trop. Afr. **2,** 268 (1931).

When Anderson enumerated the African species of *Hypoëstes* he failed to mention *H. rosea* Beauv. whilst he described a new species based on a specimen collected by Barter, which he named *H. Barteri*. Apparently Clarke never saw Beauvois' specimen of *H. rosea*, for he misidentified it with *H. consanguinea* Lindau. He also identified a specimen in the Natural History Museum Herbarium collected by Don in São Thomé as *H. rosea*.

Comparison of Don's specimen with *Preuss* 599, the type specimen of *H. consanguinea* Lindau, showed the former to be a distinct species. In order to try to settle its identity, the type specimen of *H. rosea* Beauv. was examined. This was found to be identical with *H. Barteri* T. Anders., which name becomes a synonym of *H. rosea*. The name *H. consanguinea* Lindau is restored to the species based on *Preuss* 599, but the specimen from São Thomé, being rather scanty, has not yet been identified. E. M-R.

[11]Diels in Engl. Jahrb. **23**, 492 (1897). [12]Hiern in Dyer, Fl. Cap. **4,** pt. 2, **243**. [13]Hemsley et Skan in Dyer, Fl. Trop. Afr. **4,** pt. 2, 298, 299 (1906).

Barleria (Somalia) Phaylopsis *Milne-Redhead*, sp. nov. [Acanthaceae]; a *B. diffusa* (Oliv.) Lindau habitu herbaceo nec suffruticoso, foliis multo majoribus cystolithiis instructis, inflorescentiis substrobiliformibus differt.

Herba perennis, caulibus pluribus decumbentibus e caudice ortis; caules simplices vel interdum perpauci ramis axillaribus basin versus instructi, usque 25 cm. longi, setoso-hirsuti, ad nodos flexi, internodiis 2–6 cm. longis. *Folia* oblanceolata, apice subobtusa, basi attenuata, sessilia, usque 9 cm. longa, 2·8 cm. lata, costa et margine setoso-hirsuta, ceterum glabra, utrinque cystolithiis inspersis instructa. *Inflorescentiae* ut videtur terminales, substrobiliformes, cymis 1-floris ex axillis foliorum superiorum redactorum exortis; folia superiora usque 12 mm. longa, 2·5 mm. lata, redacta, glandulosa; bracteae oppositae, lanceolatae, apice subacutae, basi attenuatae, circiter 10 mm. longae, dense glandulosae. *Calyx* usque ad basin 4-partitus, pilis glandulosis et eglandulosis intermixtis hirsutus; segmentum posticum lanceolatum, acutum, 13 mm. longum, 2·5 mm. latum, trinerve; anticum alte bifidum, 12 mm. longum, 2·2 mm. latum, binerve; segmenta lateralia linearisubulata, 10·5 mm. longa, 0·8 mm. lata. *Corolla* lilacina, 19 mm. longa; tubus cylindricus, 10 mm. longus; segmenta subsimilia, obovata; segmentum anticum apice emarginatum, 7 mm. latum; duo postica 3·5 mm. lata; duo lateralia 5·5 mm. lata. *Stamina* 2, circiter 3 mm. a basi tubi affixa; filamenta filiformia, 10 mm. longa; antherae biloculares, loculis lineari-oblongis 2·5 mm. longis leviter divergentibus; staminodia plus minusve obsoleta. *Ovarium* oblongum, 2·5 mm. altum, puberulum, apice in stylum filiformem 9·5 mm. longum apice integrum anguste attenuatum, 4-ovulatum, ovulis duobus inferioribus abortivis minutis; discus minutus. *Capsula* puberula, 12 mm. longa, superne in rostrum 6 mm. longum contracta.

Northern Rhodesia. Solwezi District: in *Brachystegia* woodland by the Mbulungu Stream west of Mutanda Bridge, 9 July 1930, *Milne-Redhead* 690:—Tufted perennial; flowers lilac, with or without markings.

Labiatae.

Acrocephalus (Acrocephalus § Holochili) **speciosus** *E. A. Bruce*, sp. nov. [Labiatae]; affinis *A. tuberoso* Robyns et Lebrun sed capitulis paucioribus majoribus cylindricis, foliis et caulibus dense albido- vel stramineo-pilosis differt.

Herba perennis, erecta, circiter 7·5 dm. alta; caules erecti, sublignosi, parce ramosi, rigidi, sulcati, basi circiter 5 mm. diametro, dense adscendente albido- vel stramineo-pilosi apicem versus densius, internodiis 4–7 cm. longis. *Folia* sessilia vel subsessilia, opposita, lanceolata vel oblongo-lanceolata, basi late cuneata, apice acuta vel subacuta, 4–10 cm. longa, 1–3 cm. lata, margine crenulata, utrinque praesertim nervis parce pilosa, nervis lateralibus utrinsecus circiter

10 supra impressis subtus valde prominentibus. *Capitula* terminalia et caules laterales terminantia, cylindrica, usque 9 cm. pedunculata, 1·5–3 cm. longa, circiter 1·5 cm. diametro, multiflora; bracteae exteriores viridescentes, foliis similes sed minores; bracteae interiores ovato-cordatae, basi late cordatae, apice caudato-acuminatae, extra pilosae, intus glabrae, margine piloso-ciliatae, usque 1·4 cm. longae et 1·2 cm. latae. *Flores* vulgo 3 pro bractea. *Calyx* bilabiatus; tubus campanulatus, 1·5 mm. longus, extra pilis albidis longissimis sericeis usque 5 mm. longis dense indutus, intus glaber; lobus anticus lanceolatus, usque 2 mm. longus, apice acutus; lobus posticus semi-orbicularis, circiter 0·8 mm. longus, apice subtruncatus vel late rotundatus. *Corolla* exserta, usque 9 mm. longa; tubus anguste cylindricus, faucem versus leviter dilitatus, usque 7 mm. longus, basi 1 mm. fauce 2 mm. diametro; labium anticum integrum, ovato-ellipticum, vix 2 mm. longum, apice acutum; labium posticum trilobatum, lobis lateralibus ovato-triangularibus 1 mm. longis, lobo medio obovato 1·5 mm. longo, omnibus ciliatis. *Stamina* infra faucem inserta, demum exserta, filamentis 4 mm. longis, antheris subrotundatis; stylus minute bifidus, circiter 7 mm. longus.

Northern Rhodesia. Abercorn District: Near Issoko, 1050 m., 27 Oct. 1936, *B. D. Burtt* 6100 (type) :—In clumps in hilly *Brachystegia* country. Abercorn Lake, 1500 m., 19 July 1930, *Hutchinson & Gillett* 3881 :—7·5 dm. high.

Iboza multiflora (*Benth.*) *E. A. Bruce*, comb. nov.—*Plectranthus multiflorus* Hochst. ex Benth. in DC. Prodr. **12**, 49 (1848), nomen. *Moschosma multiflorum* Benth. l.c.

Iboza urticifolia (*Baker*) *E. A. Bruce*, comb. nov.—*Moschosma urticifolium* Baker in Dyer, Fl. Trop. Afr. **5**, 353 (1900).

VIII—RESEARCHES ON SILENE MARITIMA AND S. VULGARIS: XXV.*

E. M. Marsden-Jones and W. B. Turrill.

Investigations of Plants from Fearnan, Loch Tay, Scotland.

In August, 1929, we received through Prof. K. W. Braid seeds of *S. vulgaris* collected near Fearnan, on the shore of Loch Tay, by Mr. D. A. Haggert. The following information was received from the collector: "It is mixed seed of red and white plants. The plant is still in good form at Fearnan though the white now predominates. When I first discovered it the shore plant was almost all red-purple. The white is now more common."

Amongst the plants raised from this seed, and in the families obtained by selfing certain of them, were white and coloured flowered individuals. These have been classified into four groups as follows:

* Continued from K.B. 1939, 473.

Dark : upper surface of petals Laelia Pink, lower surface Tourmaline Pink (Ridgway Pl. XXXVIII).

Medium : upper and lower surface Pale Laelia Pink, lower surface with veins Tourmaline Pink.

Pale : upper and lower surface very dilute Pale Laelia Pink, lower surface in veins Pale Laelia Pink.

White : with no trace of colour.

All the plants dealt with in this paper come within the species *S. vulgaris* and all died down completely to ground level for a typical hemicryptophytic winter condition.

Three of the plants from the original wild seed (grown at Potterne under the symbol L.1) were chosen as stock plants and are described below.

B.37. *Habit* : compact, stems erect, up to 4·6 dm. long ; with medium anthocyanin in vegetative parts ; glabrous ; not strict.

Leaves : narrow lanceolate, averaging for well developed leaves 5 cm. long, 1·5 cm. broad, glabrous, margins not ciliated but sometimes minutely crenulate.

Inflorescence and sex : with up to 15 flowers ; flowers zygomorphic ; bracts at first green herbaceous many becoming later scarious, eciliated ; hermaphrodite.

Calyx : subinflated with medium anthocyanin.

Corolla : with petals bilobed, divided ¾ length of lamina, petals and segments not contiguous or overlapping, 1·9 cm. long, 8 mm. broad, boss, blotch present, colour medium.

Filaments : purple ; anthers purple.

Stigmata : purple ; immature seeds white.

Mature capsules : ovoid-ellipsoid, 7 mm. long (excluding teeth), 6·5 mm. diam., teeth 1·5 mm. long, erect, mouth 2 mm. diam., carpophore 2 mm. long, 2 mm. diam.

Mature seeds : tubercled.

B.38. *Habit* : compact, stems erect, up to 6·2 dm. long ; with medium anthocyanin in vegetative parts ; glabrous ; not strict.

Leaves : narrow oblanceolate to lanceolate, averaging for well developed leaves 5·5 cm. long, 1·8 cm. broad, glabrous, margins ciliated.

Inflorescence and sex : with up to 34 flowers ; flowers zygomorphic ; bracts as for B.37 ; hermaphrodite.

Calyx : subinflated, with medium anthocyanin.

Corolla : with petals bilobed, divided ¾ length of lamina, petals and segments not contiguous or overlapping, 1·7 cm. long, 8 mm. broad, boss, blotch absent, colour pale.

Filaments : purple ; anthers purple.

Stigmata : purple ; immature seeds white.

Mature capsules : ovoid-ellipsoid, 7 mm. long (excluding teeth), 7 mm. diam., teeth 1·5 mm. long, erect, mouth 2 mm. diam., carpophore 2 mm. long, 2 mm. diam.

Mature seeds : armadillo.

B.39. *Habit* : spreading and ascending, stems up to 5·5 dm. long ; with much anthocyanin in vegetative parts ; glabrous ; semi-strict.

Leaves : lanceolate to linear lanceolate, averaging for well developed leaves 6·5 cm. long, 1·7 cm. broad, glabrous, margins more or less ciliated.

Inflorescence and sex : with up to 15 flowers ; flowers zygomorphic ; bracts as for B.37 ; hermaphrodite.

Calyx : subinflated, with medium anthocyanin.

Corolla : with petals bilobed, divided $\frac{3}{4}$ length of lamina, petals and segments not contiguous or overlapping, 2 cm. long, 8 mm. broad, small scale, blotch absent, colour pale.

Filaments : purple, anthers purple.

Stigmata : purple ; immature seeds white.

Mature capsules : ovoid-ellipsoid, 6·5 mm. long (excluding teeth), 6·5 mm. broad, teeth 1·5 mm. long, erect, mouth 2 mm. diam., carpophore 2 mm. long, 1·5 mm. diam.

Mature seeds : armadillo.

The F_1 and F_2 families derived from these stock plants, after controlled pollinations, have been designated as follows :

N.120=B.39 selfed.
N.267=N.120 plant 3 selfed.
N.285=N.120 plant 1 selfed.
N.286=N.120 plant 4 selfed.
N.121=B.37 selfed.
N.311=N.121 plant 6 selfed.
N.122=B.38 selfed.

N.120=B.39 selfed. 60 plants in the family.

Habit : for all plants spreading and ascending ; stems up to 6·1 dm. long ; with much anthocyanin in vegetative parts ; glabrous ; mat ; 8 strict : 34 semi-strict : 18 not strict.

Leaves : as in parent.

Inflorescence and sex : with up to 23 flowers ; flowers zygomorphic, 38 hermaphrodite : 1 hermaphrodite and female : 10 female.

Calyx : plants segregated for inflated, subinflated, and narrow calyces, but owing to bad attacks of *Marssonina* a large majority of the plants could not be scored for calyx shape ; 34 medium anthocyanin : 10 little anthocyanin.

Corolla : petals all bilobed, with $\frac{3}{4}$ lobing ; all petals and segments not overlapping or contiguous ; all with no anthocyanin blotch ; 45 with small scale : 4 with boss ; colour 2 dark : 18 medium : 15 pale : 12 white.

Filaments : all purple (when present) ; anthers all purple (when present).

Stigmata : all purple ; immature seeds all white.

Mature capsules : all of *vulgaris* type.

Mature seeds : all armadillo.

N.267=N.120 plant 3 selfed. 17 plants in the family.

Habit: for all plants spreading and ascending; stems up to 7·8 dm. long; with much anthocyanin in vegetative parts; glabrous; mat; all not strict.

Leaves: as in parent.

Inflorescence and sex: with up to 48 flowers; flowers zygomorphic; 13 hermaphrodite : 1 hermaphrodite and female : 3 female.

Calyx: 2 inflated : 10 subinflated : 5 narrow; all with medium anthocyanin.

Corolla: petals all bilobed, with $\frac{3}{4}$ lobing; all petals and segments not overlapping or contiguous except for slight overlapping in one plant; anthocyanin blotch 1 present : 16 absent; 13 with scale : 3 with small scale : 1 with boss; colour 1 medium : 16 pale.

Filaments: 1 purple : 13 white; anthers all purple (when present).

Stigmata: 14 purple : 3 white; immature seeds all white.

Mature capsules: all of *vulgaris* type.

Mature seeds: all armadillo.

N.285=N.120 plant 1 selfed. 22 plants in the family.

Habit: for all plants spreading and ascending; stems up to 3·1 dm. with much anthocyanin in vegetative parts; glabrous; mat; 3 semi-strict : 19 not strict.

Leaves: as in parent.

Inflorescence and sex: with up to 44 flowers; flowers zygomorphic; 6 hermaphrodite : 1 hermaphrodite and female : 11 female.

Calyx: all subinflated; all with medium anthocyanin.

Corolla: all petals and segments not overlapping or contiguous; anthocyanin blotch absent in all; 1 scale : 10 small scale : 7 boss; colour all white except for one plant with a tinge of pink.

Filaments: all purple (where scorable); anthers all purple (where scorable).

Stigmata: 17 purple : 1 white (remainder not scorable); immature seeds all white.

Mature capsules: all of *vulgaris* type (where scorable).

Mature seeds: all armadillo (where scorable).

N.286=N.120 plant 4 selfed. 54 plants in the family.

Habit: for all plants spreading and ascending; stems up to 6·3 dm. long; with much anthocyanin in vegetative parts; glabrous; mat; 11 semi-strict : 43 not strict.

Leaves: as in parent.

Inflorescence and sex: with up to 40 flowers; flowers zygomorphic; 31 hermaphrodite : 2 hermaphrodite and female : 21 female.

Calyx: 13 inflated : 41 subinflated; 51 with medium anthocyanin : 3 with little.

Corolla : petals all bilobed ; all with $\frac{3}{4}$ lobing ; petals and segments all not overlapping or contiguous ; anthocyanin blotch absent in all ; 14 small scale : 40 boss ; colour 34 pale : 20 white.

Filaments : 15 purple : 18 white ; anthers all purple (when present).

Stigmata : 41 purple : 13 white ; immature seeds all white.

Mature capsules : all of *vulgaris* type (where scorable).

Mature seeds : all armadillo (where scorable).

N.121=B.37 selfed. 28 plants in the family.

Habit : rather compact and ascending ; stems up to 6·3 dm. long ; with medium anthocyanin in vegetative parts ; glabrous ; mat ; 4 semi-strict : 24 not strict.

Leaves : as in parent.

Inflorescence and sex : with up to 44 flowers ; flowers zygomorphic ; 14 hermaphrodite : 2 female (remainder unscorable). 12 plants were completely unscorable for flower characters as they either did not produce flowering stems or these failed to flower properly, and others could only be partially scored. Plants were badly attacked by *Marssonina*, and a few also by *Ustilago*, but in addition there were obviously genetical factors concerned in the failure to produce functioning flowering stems (see N.311).

Calyx : 1 inflated : 3 subinflated (remainder unscorable) ; 5 medium : 2 little anthocyanin.

Corolla : petals all bilobed, with $\frac{3}{4}$ lobing ; all petals and segments not overlapping or contiguous ; anthocyanin blotch absent (where scorable) ; 1 small scale : 15 boss ; colour 4 dark : 7 medium : 1 pale : 4 white.

Filaments : all purple (where scorable) ; anthers all purple (where scorable).

Stigmata : all purple (where scorable) ; immature seeds all white (where scorable).

Mature capsules : 6 *vulgaris* type (remainder did not produce fruits).

Mature seeds : 4 tubercled (remainder did not produce seeds).

N.311=N.121 plant 6 selfed. 57 plants in the family.

The plants all showed a low strangely compact and stunted growth, without the production of normal flowering stems. 14 plants actually produced each a few flowers in the course of the season, but only a certain number of characters could be scored for these. No seed at all was set except by 4 plants and the infructescences of plants other than these 4 bore only shrivelled calyces surrounding collapsed ovaries. In the 4 plants the capsules were of *vulgaris* type and the seeds were tubercled.

N.122=B.38 selfed. 29 plants in the family.

Habit : rather compact and ascending ; stems up to 4·4 dm. long ; with medium anthocyanin in vegetative parts ; glabrous ; mat ; all not strict.

PLATE IV.

Stock Plants. Fig. 1, no. B.37. Fig. 2, no. B.38. Fig. 3, no. B.39.

1.

2.

3.

Leaves : as in parent.

Inflorescence and sex : with up to 28 flowers ; flowers zygomorphic ; 19 hermaphrodite : 3 hermaphrodite and female : 6 female.

Calyx : 1 inflated : 7 subinflated : 1 narrow ; 14 with medium anthocyanin : 3 with little.

Corolla : petals all bilobed, with $\frac{3}{4}$ lobing ; all petals and segments not overlapping or contiguous ; anthocyanin blotch absent (where petals scorable) ; 7 small scale : 19 boss ; colour 4 dark : 12 medium : 6 pale : 6 white.

Filaments : all purple (where scorable), except in one plant, in which no colour was detectable ; anthers all purple (where scorable).

Stigmata : all purple (where scorable), except in one plant with white stigmata ; immature seeds all white.

Mature capsules : all of *vulgaris* type (where scorable).

Mature seeds : all armadillo (where scorable).

Discussion.

The Loch Tay plants and their offspring as dealt with in this paper are classified under *S. vulgaris* since they show the following characters : all died down in the winter to the hemicryptophytic state normal for this species ; relatively large leaf size ; inflorescence many-flowered (up to 48 flowers) ; flowers zygomorphic ; calyx shape of *vulgaris* ; petals and segments nearly all not overlapping or contiguous ; mature capsules of *vulgaris* shape with erect teeth. The experiments were made in the hope of throwing light on the genetics of petal colour. In addition there have appeared effects due to a gene (or genes) reducing or preventing the production of flowering stems. Scorings for certain other characters are also discussed but because of general uniformity of behaviour in the three parents and in all F_1 and F_2 families the following need not be mentioned again in this paper : indumentum (all plants glabrous) ; leaf-shape and size (all plants within the usual range for the species) ; flowers (zygomorphic) ; petal lobing (bilobed, $\frac{3}{4}$ lobing) ; petals and segments (not contiguous or overlapping, with one exception which may represent merely a phenotypic variation) ; anthers (purple) ; immature seeds (white) ; mature capsules (of ordinary *vulgaris* type and ovoid-ellipsoid in shape).

Habit : the compact habit of B.37 and B.38, and the more spreading habit of B.39 appeared also in the F_1 and F_2 offspring ; B.39 had much anthocyanin in the vegetative parts, B.37 and B.38 had medium anthocyanin, and the offspring families all bred true respectively for these characters ; B.37 and B.38 were not strict and the offspring bred true to this character (as far as it was determinable), B.39 was semi-strict and threw a 4 : 17 : 9 ratio for strict : semi-strict : not strict, but the F_2 families from semi-strict parents threw 3 semi-strict : 19 not strict and 11 semi-strict : 43 not strict respectively, while the one family from a not strict plant gave only

not strict offspring. It is probable that this character has a genetic basis but is easily modified by environmental conditions (especially water supply, which in turn is modified by disease).

Sex : the three stock plants and the F_1 plants used as parents for F_2 families were all hermaphrodite. All the families segregated for hermaphrodite : female but individual families gave diverse ratios. Summation of all families gave 127 hermaphrodite : 8 hermaphrodite with some female : 53 female. This for hermaphrodite (a few with female flowers as well) : female only gives the ratio 2·55 : 1. Since in the course of our work on this species and the morphologically and genetically closely allied *Silene maritima* we have recorded the sex of many thousands of individuals and have never found a plant which we could describe as " male " (i.e., male-fertile, female-sterile) we have to assume that if an M F scheme is the basis of sex in these species the F gene (or genes) is extremely stable. The corresponding F gene (or genes) in *Ranunculus acris* and other species of this genus are also very stable and a male plant has only once been recorded (by us) from the wild.

Calyx : the stock plants had subinflated calyces with medium anthocyanin. There was segregation for shape in four families but owing to the impossibility of scoring many plants for this character it need not be further discussed here. All offspring plants had anthocyanin, and most showed a medium amount but four families showed some plants with little. It is possible that N.120, N.121, and N.122 really show 3 : 1 ratios for medium : little, while N.267, 285 (certainly) and possibly also N.286 are homozygous for medium anthocyanin, the 3 plants with little being phenotypically modified medium plants.

Corolla : anthocyanin blotch was present in B.37 but absent in B.38 and B.39. All offspring had no blotch except for one plant derived (as an F_2 plant) from B.39. It must be noted that the scoring for anthocyanin blotch in coloured petals is difficult and sometimes unsatisfactory. We have, however, previously had reason to suspect mutations occurring for this character. B.37 and B.38 had bosses, B.39 had small scales. It is significant that scales appeared only in F_2 offspring from B.39 (from F_1 plants with small scales) and the " small scales " recorded in offspring from B.37 and B.38 may well be enlarged bosses such as occur in many wild populations of *S. vulgaris*.

Petal colour : the degrees of colour form a continuous series and the limits of the classes D, M, and P are arbitrary, as is the scoring of " border-line " plants. The figures for colour : white on summation of all five families scored for petal colour, and excepting N.285 which was derived from a white-flowered plant and on selfing gave only white flowers, were 120 coloured to 42 white, which suggests a 3 : 1 ratio. Figures for the individual families suggest that dark, medium, and pale may all be phenotypic modifications of one genotype.

Filaments : all stock-plants had purple filaments and families N.120, N.285, N.121, and (probably) N.122 bred true to this character. N.267 gave 1 purple : 13 white and N.286 gave 15 purple : 18 white, both from plants with purple filaments. These figures cannot at present be explained.

Stigmata : the three stock plants had purple stigmata as had all plants of N.120, N.121, N. 122, and (with one possible exception) N.285. As with the filaments it is again N.267 and N.286 which threw plants with white stigmata, though with different figures from those recorded for filaments, namely 14 : 3 and 41 : 13 respectively, which may represent 3 : 1 ratios.

Mature seeds : B.37 had tubercled, B.38 and B.39 had armadillo seeds and the offspring families bred true to these characters respectively.

Non-flowering : families N.121 and N.311 contained a gene or genes which more or less inhibited the production of flowering stems to normal maturity. The gene or genes came from B.37 but as this plant died before it was realized that a genetical basis must be postulated for the abnormal behaviour (which was especially prominent in the F_2 family N.311, affecting in this family all the plants in greater or less degree) it is not possible to repeat the experiments. For the family N.121 the figure 12 for plants not flowering properly is probably too low since every effort was made to score as many flower characters as possible even in those plants in which development of flowering stems and inflorescences was very poor. The plants were highly susceptible to *Marssonina* and some also suffered from *Ustilago* and it was thought at the scoring time of this family that these parasitic fungi might alone be responsible for the abnormal development. This now seems highly improbable, but their occurrence explains why it is not possible to determine the exact genetic behaviour of the stunted growth from our figures.

Summary.

An account is given of plants grown from wild seed collected near Loch Tay and of breeding carried out with certain individuals selected as stock plants. Characters which showed segregation were concerned with habit, sex, calyx shape, anthocyanin in calyx, possibly anthocyanin blotch in petals, corona, petal colour, filament colour, stigma colour, and flowering. Coloured petals versus white petals show a very close approximation to a 3 : 1 ratio, and depths of colour may well be due to phenotypic variation of one genotype. The presence of a gene (or genes) more or less preventing the proper development of flowering stems is strongly suggested in two families derived from one stock-plant.

The research on which this paper is based has been aided by a Royal Society Government Grant.

IX—NOTES ON TWO ASIATIC GENERA OF LAURACEAE. H. K. Airy-Shaw.

I. Caryodaphnopsis, gen. nov.

Three species currently referred to *Nothaphoebe* have evidently little or no affinity with that genus. These are: *N. tonkinensis* Lecomte, *N. baviensis* Lecomte and *N. pyriformis* (Elm.) Merr. They appear to have been referred to this genus on account of their 4-locellate anthers and minute outer perianth-segments. But in most other characters they differ widely from *Nothaphoebe*, and the following new genus is therefore proposed for their reception.

Caryodaphnopsis *Airy-Shaw*, gen. nov. (Lauraceae—? Apollonieae); foliis oppositis triplinerviis, perianthii segmentis exterioribus minutis, interioribus pro rata majusculis valvatis, staminibus fertilibus 9, iis seriei intimae extrorsis, antheris 4-locellatis, staminodiis 3, fructu magno pyriformi pedicello aliquantum incrassato ab omnibus ceteris *Lauraceis* facile distinguendum.

Perianthii tubus subnullus; segmenta 6, exteriora minuta, deltoïdea, aestivatione aperta, interiora pro rata magna, late triangulari-ovata, aestivatione valvata. *Stamina* 9, vel clavato-oblonga filamento vix distincto, vel anthera quadrata filamento distincto, applanata, 4-locellata, ordinis I et II introrsa, ordinis III extrorsa, haec tantum ut videtur basi glandulifera, glandulis subsessilibus; staminodia 3, breviter sagittiformia, breviter stipitata. *Ovarium* parvum, ovoïdeum, in stylum brevem attenuatum, stigmate parvo 2–3-lobo. *Fructus* (e descr. cl. Elmer et Liou Ho et specim. imperfectis Elmerianis tantum mihi cognitus) magnus, obovoïdeus seu pyriformis, drupaceus, durus, nitenti-viridis; pedicello plus minus incrassato, apice expanso; perianthii segmenta caduca. *Semen* (e descr.) magnum, conforme.

Arbores mediocres vel parvi. *Ramuli* teretes. *Folia* opposita vel subopposita, triplinervia, tenuiter coriacea, petiolata. *Flores* hermaphroditi, in thyrsos laxos axillares saepe seriales minute bracteatos dispositi.

Species 3, Yunnan, Tonkin, Ins. Philippinarum Borneonisque borealis incolae. Typus: *C. tonkinensis* (Lecomte) Airy-Shaw.

The affinities of this genus are not very clear, but I have no doubt about its distinctness. The name has been taken from the striking resemblance of the leaves to those of certain species of *Cryptocarya* Sect. *Caryodaphne* (=*Pseudocryptocarya* Teschner), *e.g. C. laevigata* Bl. In characters of flower and fruit, however, the genus is much more like *Dehaasia*. But it differs from both these genera in the opposite arrangement of the leaves and in the 4-locellate anthers. The question of what tribe it should be placed in must await a rational revision of the entire *Lauraceae*, for its affinities are evidently rather with the genera with 2-locellate anthers (*Cryptocaryeae* and *Apollonieae*) than with other 4-locellate genera (*Cinnamomeae*).

Ramuli, petioli, folia subtus tenuissime ferrugineo-tomentella..... 3. *baviensis*

Ramuli, petioli, folia glaberrima :

Inflorescentia floresque dense tomentella ; flores majusculi, 3·5 mm. diametro ; stamina clavata, filamento vix distincto..... 1. *tonkinensis*

Inflorescentia floresque minutissime puberula ; flores subduplo minores, circiter 2 mm. diametro ; antherae quadratae, filamento distincto ..... 2. *Henryi*

1. **Caryodaphnopsis tonkinensis** (*Lecomte*) *Airy-Shaw*, comb. nov.

Nothaphoebe tonkinensis Lecomte in Nouv. Arch. Mus. [Par.] **5,** 106 (1913) et in Lecomte, Fl. Gén. Indoch. **5,** 118 (1914) ; Liou Ho, Laur. Chine et Indoch. 76 (1934).

Persea pyriformis Elm. Leafl. Philipp. Bot. **8,** 2727 (1915) ; Merr. Enum. Philipp. Fl. Pl. **2,** 188 (1923) ; *synon. nov.*

Nothaphoebe pyriformis (Elm.) Merr. in Univ. Calif. Publ. Bot. **15,** 77 (1929).

Tonkin. Tu-Phap, dans les bois, Apr. 1887, *Balansa* 2441 (typus in Herb. Mus. Par., dupl. in Herb. Kew.). Also *Poilane* 13021, 13036, ex Liou Ho, l.c. (not seen).

Annam. *Poilane* 1406, ex Liou Ho, l.c. (not seen).

Philippines. Samar & Mindanao : see Merr. Enum. l.c. ; also Bukidnon Prov., Mar.–Apr. 1926, *Ablaza* in *For. Bur.* 30282. Leyte, Mt. Abucayan, Feb. 1923, *Edaño* in *Bur. Sci.* 41720. Sulu Prov., Tawi-tawi, July–Aug. 1924, *Ramos & Edaño* in *Bur. Sci.* 43955.

Brit. N. Borneo. Near Tawao, Oct. 1922–Mar. 1923, *Elmer* 21857.

The Philippine and Bornean material referred to *Persea* or *Nothaphoebe pyriformis* agrees perfectly with the type-collection of *N. tonkinensis*. Balansa calls the plant a shrub, but Elmer and Poilane refer to it as a tree 8–15 m. in height. It is readily distinguished from the other two species by its relatively large, densely tomentellous flowers.

2. **Caryodaphnopsis Henryi** *Airy-Shaw*, sp. nov.

Nothaphoebe tonkinensis f. *brevipedicellata* Liou Ho, l.c. 77.

A *C. tonkinensi* foliis basi rotundatis, floribus subduplo minoribus glaberrimis, a *C. baviensi* ramis petiolis nervis subtus glabris, ab utraque antheris subquadratis filamento distincto recedit.

Arbor parva, 3–4·5 m. alta. *Ramuli* graciles, usque 3·5 mm. diametro, teretes, cortice laevi obscure griseo minute et parcissime lenticellato. *Folia* opposita, ovata, interdum fere elliptico-oblonga, basi optime rotundata, raro levissime subcordata vel subcuneata, apice breviter acuminata, acuta, 9–15 cm. longa, 4·5–6·5 cm. lata, integerrima, chartacea, glabra, siccitate supra obscure brunnea,

subtus glaucescentia ; costa supra subplana, subtus prominula ; nervi laterales 3–4-jugi, uno jugo subrecto paullo supra basin e costa orto (unde folia triplinervia) et longe ultra medium folium procurrente, ceteris supra medium ortis valde arcuatis prope marginem anastomosantibus ; nervi secundarii e lateralibus marginem versus extensi, procurvi ; omnes graciles, subtus prominuli ; venulae minores tenuissimae, omnes cum costa angulum rectum efformantes et sibi parallelae, venulis ultimis reticulum subtilissimum efformantibus ; petioli 10–12 mm. longi, vix 1·5 mm. crassi, supra plani, subtus teretes. *Inflorescentiae* axillares, thyrsoïdeae, 4–7 cm. longae, graciles, ramosae, ramis oppositis 5–8 mm. longis, sub lente minutissime puberulae, statu valde juvenili parcissime ferrugineo-pubescentes, bracteis minutis brunnescentibus. *Flores* per 6–8 in apice ramorum cymose dispositi, pedicellis 2–3 mm. longis. *Perianthii* segmenta exteriora minuta, deltoïdea, vix 0·4 mm. longa ; segmenta interiora late triangulari-ovata, 2 mm. longa et lata, subacuta, extra minute puberula, intus sparsiuscule ferrugineo-tomentella. *Stamina* ordinis I et II simillima, 1 mm. longa, anthera plana ovato-quadrata apice truncata, filamento distincto, ordinis III longiora, 1·5 mm. longa, glandulis binis magnis basalibus anthera haud multo minoribus ; omnium filamenta (maxime dorso) pubescentia. *Staminodia* breviter sagittata, 0·8 mm. longa, glabra, stipitata, stipite pubescente. *Ovarium* ovoïdeum, glabrum, in stylum brevem attenuatum, totum 1 mm. longum, stigmate parvo. *Fructus* ignotus.

Yunnan. Fêng Chen Lin, S. of Red River, mountain forests, 2100 m., *Henry* 10692 (Herb. Kew.) : " Tree 10′–15′."

This was treated merely as a form of *N. tonkinensis* by Liou Ho, but the flowers are so different that it must be considered specifically distinct.

3. **Caryodaphnopsis baviensis** (*Lecomte*) *Airy-Shaw*, comb. nov. *Nothaphoebe baviensis* Lecomte in Nouv. Arch. Mus. [Par.] l.c. 107, et in Lecomte, Fl. Gén. Indoch. l.c. ; Liou Ho, l.c. 77.

Tonkin. Ravins à la base du Mont Bavi, 1888, *Balansa* 2445 (typus in Herb. Mus. Par., dupl. in Herb. Kew.) : " Arbrisseau à rameaux un peu sarmenteux. Corolle jaunâtre."

Differs from the other species in the close fine dark brown tomentum of the branches, petioles and nerves beneath.

II. Stemmatodaphne in Borneo.

The monotypic genus **Stemmatodaphne** *Gamble* (in Kew Bull. 1910, 227) must be closely related to *Dehaasia* and *Beilschmiedia* (Tribe *Apollonieae*), though Gamble places it next to *Phoebe* (Tribe *Cinnamomeae*). The character of the 2- or 4-locellate anthers seems to have had too much importance attached to it in the classification of the *Lauraceae* ; in this instance it certainly separates related genera. I find that Merrill has independently described the species as a *Beilschmiedia* from Borneo.

S. perakensis *Gamble*, l.c., et in Journ. As. Soc. Beng. **75,** 111 (1912) ; Stapf in Hook. Ic. Pl. **30,** t. 2984 (1913).

Beilschmiedia longipedicellata Merr. in Univ. Calif. Publ. Bot. **15,** 83 (1929), non Ridley in Kew Bull. 1926, 475 ; *synon. nov.*

SARAWAK. Entoyut River, Baram District, Dec. 1894, *Hose* 408.

BRIT. N. BORNEO. Near Tawao, 1922/3, *Elmer* 20782, 20875.

The genus has not previously been recorded as such from Borneo. Merrill reports only six stamens for his *Beilschmiedia longipedicellata*, but in the Kew material of *Elmer* 20875 there were nine perfectly developed stamens in the two flowers which I examined.

X—BERBERIS CHRYSOSPHAERA: A NEW SPECIES FROM SOUTHERN TIBET.

B. O. MULLIGAN (Royal Horticultural Society's Gardens, Wisley).

The continued exploration by Captain Kingdon Ward of the mountainous area at the eastern end of the Himalayan chain, which includes parts of Burma, Assam and Tibet, has already brought to light a number of new species of evergreen *Berberis* of the section *Wallichianae*, notably *B. amabilis* Schneider,* *B. calliantha* Mulligan, *B. hypokerina* Airy-Shaw, *B. incrassata* Ahrendt, and *B. Wardii* Schneider.* To these must now be added another, quite distinct from any other in cultivation, but in habit and botanical details most closely resembling *B. candidula* Schneider, a native of Central China which has been known in gardens for many years.

The field note of Capt. Ward's plant is as follows :

" K.W. 11036. Berberis sp. nov. ?

" A low growing and spreading, almost dwarf, evergreen bush, thickly clothed with highly polished dark green rigid leaves interspersed in winter with scarlet leaves, brilliant white-silver beneath.

" There are the usual thorns, and the leaves also are prickly as in *B. Wallichii*. Flowers solitary, yellow, on long but stiff pedicels in the leaf axils ; fruits erect, blue-violet. Apparently very rare. I found one clump on the granite cliffs, approaching the Dri Pass, at about 10,000 ft. altitude. Both flowers and fruits were present on 10th December, but the plant normally blooms in the summer. One of the most beautiful foliage species I have seen, though flowers and fruit add nothing to—and take nothing away from—the plant. Zayul."

Very similar information is given by the same author in " A Plant Hunter in Tibet," 277 (1934), and in the " Gardeners' Chronicle," **98**, 124 (17th August, 1935), although in neither case is the collector's number mentioned. Capt. Ward, however, has confirmed the former reference as relating to this species, as well as the occurrence, so far as his observation went, in one situation only. We may, therefore, consider ourselves lucky that it has been successfully introduced to Britain from the few seeds obtained. I am informed

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* Published in Fedde, Rep. Spec. Nov. **46,** 257 & 262 (July 1939).

by Prof. Sir W. Wright Smith that it is also growing at the Royal Botanic Garden, Edinburgh, although it has not yet flowered there. The seeds received at Wisley were sown on 24th April, and germinated on 15th May, 1934. Subsequently the plants were potted and later transferred to the shrub nursery, whence in the spring of 1937 they were transferred—nine in number—to the Berberis collection in Seven Acres. By the early autumn of 1939 the largest plants were eighteen inches high and two and a half feet across, measurements which clearly admit it to the limited number of shrubs suitable for the rock garden, and give some indication both of its growth rate and of the limits imposed by the alpine habitat. In the Gardens a position fully exposed to the south was chosen, in light and sandy soil somewhat inclined to drought in summer; the fact that it has thriven under such conditions suggests considerable toleration and gives one encouragement to prophesy that this glossy-leaved dwarf Berberis may well become popular when it is known more widely and has been propagated in quantity. Further, as one might expect from its native habitat, it seems to be perfectly winter-hardy, since it passed through the severe weather of January, 1940, when the ground temperature descended to 0°F., with no more than slight browning of some of the leaves. A detailed description follows.

Berberis (sect. **Wallichianae**) **chrysosphaera** *Mulligan*, sp. nov.; affinis *B. candidulae* C. K. Schn., a qua ramulis juvenilibus plus minus erectis rubellis, foliis hypodermate instructis majoribus obtusioribus plerumque oblanceolatis dentibus numerosioribus, pedicellis longioribus, floribus magnis, et ut videtur ovulis circiter 9–12 differt.

Fruticulus densus, surculosus, usque 0·6–0·7 m. altus ut videtur; *ramuli* minute verrucosi, juventute rubelli. *Folia* coriacea, supra atro-viridia, nitida, subtus alba, cerifera. *Flores* solitarii, circiter 1·7 cm. diam.; pedicelli validi, circiter 2·5 cm. longi. *Fructus* non visi, e collectore caeruleo-violacei.

A small bush at present 45 cm. tall, 75 cm. in width, of suckering habit, the young *branches* more or less upright, tinged red, minutely verrucose, slightly angled, those of the previous year brown, striate, the bark peeling off in strips. *Thorns* trifid, slender, on the young shoots usually 10 mm. but up to 13 mm. long, the central one usually the longest, green with a light brown tip; on the older wood becoming brown and somewhat harder but not rigid. Internodes 2–2·5(–3) cm. long; *petiole* of the smaller leaves 1·5–3 mm., of the largest 6–9 mm., glabrous, tinged red at the base; stipules 2, filiform, 1–2 mm. long. *Leaves* of current year's shoots in fascicles of (3–)4–6(–7), on the shorter lateral branches (two years old or more) of 5–8(–9), oblanceolate, elliptic-lanceolate, or the smaller elliptic, (1·7–)2·5–4 cm. long including the petiole, 0·5–1·1 cm. wide, coriaceous, apex obtuse to acute, mucronate, base cuneate and decurrent along the petiole, margin recurved, frequently undulate with from a few up to fourteen teeth 0·75–2 mm. long on

each side, either spreading or pointing forward, upper side dark green and shining, the midrib impressed and some of the secondary veins visible, underside waxy white with a thick covering of papillae, the wax disappearing with age, midrib conspicuously raised but lateral veins only rarely visible. Hypoderm present beneath the epidermis, moderately thick-walled.

Flowers produced at the end of April or early in May at least a week before *B. candidula* Schn. or *B. calliantha* Mulligan, singly from the fascicles of leaves on one or two year old wood ; bud scales triangular-lanceolate, glabrous, 5–6 mm. long, the outer tinged red ; *pedicels* about 2·5 cm. long, green or red-tinged on the upper side, glabrous, stout, decurved in the upper half and thickened below the flower ; flower 1·7–1·8 cm. diam., the six sepals spreading almost horizontally to expose the flattened-spherical petals ; *outer sepals* 3, ovate to elliptic-ovate, slightly concave, 6–7·5 by 5–6 mm., subacute, greenish outside yellow within ; *inner sepals* 3, obovate, slightly concave, 10 by 7·5 mm., obtuse, yellow with a greenish main vein ; *outer petals* 3, obovate to nearly obcordate, concave, about 8 by 6 mm., butter yellow, emarginate, with a pair of basal nectaries at the point of adhesion with the filament ; *inner petals* 3, obovate-oblong, concave, 7 by 5 mm., slightly emarginate and undulate, of similar colour and having nectaries like the outer petals ; *stamens* 5 mm. long, filament 3 mm., flattened, apex truncate, the slightly swollen portion immediately below the anther markedly papillose ; *ovary* 4 mm. long including the capitate stigma ; ovules frosted in material available at Wisley (1st May, 1939) but apparently numbering about 9–12. Fruit not seen.

S.E. Tibet. Zayul, near the Dri-La Pass, Rongtö Valley, *Kingdon Ward* 11036 (in Herb. Brit. Mus.) ; in flower.

The name *chrysosphaera* is derived from the Greek words χρυσὸς and σφαῖρα and has reference to the colour and shape of the open flower.

The habit of the plant is quite different from that of *B. candidula* which tends to form a low compact mound and does not make the longish upright shoots of *B. chrysosphaera*, nor are they tinged red as in the latter. In the foliage distinctions may be seen in the larger size, the presence of a hypoderm, the predominatingly oblanceolate as opposed to the sharply elliptic leaves of *B. candidula*, with the greater number of spreading teeth, whilst the earlier and larger flowers on longer pedicels, besides the probably greater number of ovules, all serve to mark this off as a new and distinct species of the section *Wallichianae*.

Acknowledgments are here gratefully made to Dr. T. A. Sprague, of the Herbarium, Royal Botanic Gardens, Kew, for reading through and making suggestions for improving the Latin diagnosis and description and to Dr. G. Taylor of the British Museum (Natural History) for seeking out the type and providing me with the necessary information.

XI—MISCELLANEOUS NOTES.

The Lily Year-Book.*—The Lily Year-Book published by the Royal Horticultural Society contains many papers of interest to botanists as well as horticulturists. There are four main papers of scientific importance : (1) a carefully compiled and complete list of hybrid lilies, by A. Simmonds, with references, details as to parents and other notes ; (2) observations concerning the root-system of lilies, by M. A. H. Tincker, based on research carried out at the Wisley Laboratory ; (3) an interesting and original survey of European lilies of the Isolirion Section, by F. Stoker, and (4) an account of *Lilium pardalinum* and its varieties and allies, by A. Vollmer. There are several other notes of botanical interest and four papers dealing with the genus *Fritillaria*. On the horticultural side there are important articles on the cultivation of lilies in Canada, United States and the British Isles, and a number of miscellaneous notes on subjects of interest.

Municipal Parks.†—It is fitting that this book, which is the first dealing with municipal parks, should have been compiled by Mr. W. W. Pettigrew who has an unrivalled knowledge of the subject. During his forty years and more of municipal work at Manchester he has had to face the whole range of problems of administration connected with the running of a Parks Department.

The subject is dealt with very exhaustively and Mr. Pettigrew has put his information before his readers in a clear and concise form that can be readily assimilated. The method of treating individually subjects such as tennis courts, bowling greens, office staffs, etc., is a particularly wise one, as all that can be said about each subject is easily accessible without cross-references. Many prices given are subject to locality, but the method of comparing estimates is very sound, and one that can well be adopted by other officers in this class of municipal work.

The book makes interesting reading and is one that will benefit not only the Park Superintendent, but also young members of the profession ; it would be of great assistance if it were available to members of Parks Committees as well. The illustrations given are perhaps rather few in number, but in quality are quite in keeping with the standard of the book.

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* "Lily Year Book, No. 8, 1939." Royal Horticultural Society, London, 1939. Pp. 183, 30 figs. Price 5*s.* paper, 6*s.* cloth.

† "Municipal Parks, Layout, Management and Administration," by W. W. Pettigrew, V.M.H. London: The Journal of Park Administration, Ltd., Bank Chambers, 329, High Holborn, W.C.1. 1937. Pp. 279, 56 plates, plans, and forms. Price 21*s.* post free.

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